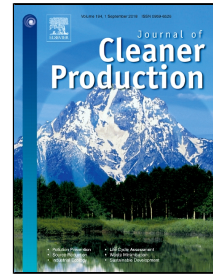


# Accepted Manuscript

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PII: S0959-6526(18)31951-6  
DOI: 10.1016/j.jclepro.2018.06.292  
Reference: JCLP 13438  
To appear in: *Journal of Cleaner Production*  
Received Date: 02 March 2018  
Accepted Date: 28 June 2018

Please cite this article as: Qiang Tu, Regina Betz, Jianlei Mo, Ying Fan, Yu Liu, Can Carbon Pricing Support Onshore Wind Power Development in China? An Assessment Based on a Large Sample Project Dataset, *Journal of Cleaner Production* (2018), doi: 10.1016/j.jclepro.2018.06.292

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## Can Carbon Pricing Support Onshore Wind Power Development in China? An Assessment Based on a Large Sample Project Dataset

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### Abstract

There is much discussion about whether the rapid expansion of onshore wind power in China is sustainable, given the decrease in feed-in tariffs (FIT). It is unclear whether the recently launched nationwide carbon pricing system, which will include 1700 power companies, can compensate for decreasing FITs and possibly provide new incentives for wind power developments. This paper investigates the ability of carbon pricing policies to compensate for declining FITs in support of onshore wind power investment in China. First, we constructed a dataset of 2059 onshore wind power projects from China's thirty provinces between 2006 and 2015 to estimate the levelized costs of electricity (LCOE). This dataset was used to assess the profitability of each wind project for different carbon prices, varying levels of FITs, curtailment rate, and discount rate. Our findings suggest that the carbon price can compensate partially for the revenue loss caused by declining FITs as well as improving the profitability of projects. However, current carbon prices in China's carbon emission trading pilots are not sufficiently high to compensate for the revenue losses, especially under the grid parity scenario. Consequently, without FITs, the

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